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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/822,954	04/12/2004	Yuguang Wu	Wu 113122cont	3612
7590 01/27/2006			EXAMINER	
Henry T. Brendzel P.O. Box 574 Springfield, NJ 07081			CHU, GABRIEL L	
			ART UNIT	PAPER NUMBER
			2114	
DATE MAILED: 01/27/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/822,954

Applicant(s)

WU, YUGUANG

Examiner

Gabriel L. Chu

Art Unit

2114

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 1, 17, 23 objected to because of the following informalities:

Referring to claim 1, Examiner has determined that Applicant has claimed Applicant's invention from the point of view of a user Ua. Referring to "said users" of claim 1, this is understood to refer to "said user" Ua. This is further supported by Applicant's use of "wishes" following "said users", thereby implying what preceded it should be singular.

Referring to claim 16, "said first command" has no antecedent basis. It is understood to refer to "said lock command X that includes a tuple (0,Ba)".

Referring to claim 17, "if T not equal Ti" is understood to refer to "if T is not equal to Ti".

Further referring to claim 17, "said user Pi" has no antecedent basis. It is understood to refer to "a user identified by value Pi".

Further referring to claim 17, "comman" is understood to refer to "command".

Referring to claim 23, "users a processors" is understood to refer to "users are processors".

Appropriate correction is required.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct

from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 13-15, 20-24 rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 11 of U.S. Patent No.

6742135 (herein 135). Although the conflicting claims are not identical, they are not patentably distinct from each other because it is well settled that the omission of an element and its function is an obvious expedient if the remaining elements perform the same function (*In re Karlson*, 136 USPQ CCPA1963).

4. Referring to claims 13-15, it is disclosed by claim 11/135, wherein A is equal to C, and C may be unlocked, 0.

5. Referring to claims 20-24, this is disclosed by 11/135.

6. Claims 16-19 rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 11 of U.S. Patent No. 6742135 (herein 135) in view of US 6112222 to Govindaraju et al.

7. Referring to claim 16, although 11/135 does not specifically claim that user sends the first command only after determining the state of the lock is 0, determining resource availability prior to acquiring a resource is well known in the art, an example of this is

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shown by Govindaraju from figure 3a, 302, 306. A person of ordinary skill in the art at the time of the invention would have been motivated to check lock status first because, as shown by Govindaraju, if it is indicated that a resource is not available, then it cannot be acquired, therefore a command to acquire would not succeed.

8. Referring to claim 17-19, this is disclosed by claim 11/135.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. **Claim 16-19 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.** The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Referring to claim 16, and subsequently claims 17-19, as understood by Examiner, an inquiring processor obtains the status of a lock by first sending a tuple (0,Ba) (See for example, figures 8 and 9, whose exemplary elements 82 and 103 are consistently used as inquiring commands throughout the reference). This is the antecedent command X that Applicant, in claim 16, claims is sent "only when said state of said lock is 0". Clearly if the command is being sent to inquire its 0 status, it cannot be "only" sent in the case when the status is not 0.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. **Claims 13-15, 21-24 rejected under 35 U.S.C. 102(b) as being anticipated by US 5432929 to Escola et al.** Referring to claim 13, Escola discloses a method for controlling access to a resource that may be shared by a plurality of users (From line 45 of column 8, “computers C1 and C2... programs P1 and P2”.),

which resource has an associated lock and the lock having an associated state, comprising the steps of: when a user Ua of said users wishes to initiate access said user sending to said lock command X that includes a tuple (0,Ba), where Ba uniquely identifies user Ua; when said lock receives said command X and said state of said lock is 0, said lock, which is a match-and-set lock that changes its state to a second term of an applied tuple only when a first term of the applied tuple matches its state, sets its state to Ba, and grants to said user access to said resource (From line 66 of column 8, “P1 and P2 send a Compare and Swap command to the subsystem containing DFI using the comparison key “0000” and new keys of “C1P1” and “C2P2” respectively. Whichever command reaches the subsystem first will be processed first, but since the subsystem inherently processes only one command at a time they cannot be processed simultaneously. Assuming that the P1 command is executed first and that the key is, in fact, “0000”, then the subsystem will change the key to “C1P1” as well as writing the

rest of the key-lock to whatever data is supplied in P1's C&S command.");

when said user wishes to terminate access, said user sending to said lock command Y that includes a tuple (Ba,0); and when said lock receives said command Y, and said state of said lock is Ba, said lock sets its state to 0, and releases said resource for access by any of said users (From line 62 of column 8, "Assume that each program using the key-lock has been written to return the key value to "0000" after it finishes the critical operation." Wherein the key-lock is written to using the C&S command.).

13. Referring to claim 14, Escola discloses Ba includes an identifier, Pa, that uniquely identifies said user, and a time stamp, Ta, that is a time pertaining to said user (From line 33 of column 8 (with emphasis), "The programs using the key-lock can write whatever information is useful into the key-lock. The programs may also work out whatever conflict resolution is desired in the event that a program acquires the key-lock and fails to release it. A convention could be established, for example, that if **the acquiring program had filed to release the key-lock after a fixed amount of time**, then other programs could overwrite the key-lock. The key point is that the key-lock is a general purpose tool which can be used in an unlimited number of ways.").

14. Referring to claim 15, Escola discloses Ba is such that both Pa and Ta can be derived from Ba (See, for example, the table in column 7.).

15. Referring to claim 21, Escola discloses said user is a process (From line 45 of column 8, "computers C1 and C2... programs P1 and P2").).

16. Referring to claim 22, Escola discloses said users are processes of a multiprocessor computer system (From line 45 of column 8, "computers C1 and C2... programs P1 and P2").).

17. Referring to claim 23, Escola discloses said users are processors of a multiprocessor computer system (From line 45 of column 8, "computers C1 and C2... programs P1 and P2").).

18. Referring to claim 24, Escola disclose said users are processes of a single multiprocessing computer (From line 45 of column 8, "computers C1 and C2... programs P1 and P2". Wherein a computer may comprise any and all processors and processes of a system.).

Claim Rejections - 35 USC § 103

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

20. **Claims 16 rejected under 35 U.S.C. 103(a) as being unpatentable over US 5432929 to Escola et al. as applied to claim 15 above, and further in view of US 6112222 to Govindaraju et al.** Referring to claim 16, Escola discloses when said user wishes to initiate access, prior to said user sending to said lock said first command, said user obtains from said lock said state of said lock, and proceeds with step of sending said first command when said state of said lock is 0 (From line 1 of column 9,

"Whichever command reaches the subsystem first will be processed first, but since the subsystem inherently processes only one command at a time they cannot be processed simultaneously. Assuming that the P1 command is executed first and that the key is, in fact, "0000", then the subsystem will change the key to "C1P1" as well as writing the rest of the key-lock to whatever data is supplied in P1's C&S command. If the P2 C&S is executed immediately thereafter it will fail because the key is no longer "0000" as specified in P2's C&S.").

Although Escola does not specifically disclose that the command is "only" sent in response to an indication of 0, determining resource availability prior to acquiring a resource is well known in the art, an example of this is shown by Govindaraju from figure 3a, 302, 306. A person of ordinary skill in the art at the time of the invention would have been motivated to check lock status first because, as shown by Govindaraju, if it is indicated that a resource is not available, then it cannot be acquired, therefore a command to acquire would not succeed. Further, from line 16 of column 8 of Escola, "The applicants' detailed embodiment of the invention does not provide a method for reading the value of the key-lock without first having executed a C&S. An alternative embodiment could provide for the equivalent of the RSD which would read the key-lock without regard to a C&S command."

21. Claim 17 rejected under 35 U.S.C. 103(a) as being unpatentable over US 5432929 to Escola et al. in view of US 6112222 to Govindaraju et al. as applied to claim 16 above, and further in view of "timeout" by Microsoft Computer Dictionary (MSCD). Referring to claim 17, Escola discloses when said user wishes to

initiate access, obtains said state of said lock, and said state of said lock Bi is other than 0 or Ba, said user proceeds with the following steps: derives value of Pi and T from said state (Table of column 7, "Key-lock" and "Subsystem timer value".);

obtains value of Ti that pertains to said user Pi (Table of column 7, "Current Subsystem timer".);

in case of failure, sends command Z to said lock, which command includes tuple (Bi,Ba) (From line 37 of column 8, "A convention could be established, for example, that if the acquiring program had failed to release the key-lock after a fixed amount of time, then other programs could overwrite the key-lock." From line 1 of column 7, "Additional optional data such as the subsystem's timer value that was written when the key-lock was last updated may also be read and transferred along with the key-lock. When a program attempts to update the key-lock and the operation fails because the keys are not equal, the program may need to read the key-lock to determine the proper course of action. The RSD command returns the contents of the key-lock prior to the C&S command. If the C&S command was successful the program may not need the prior contents of the key-lock and may ignore it. If the C&S has failed, then the key-lock should contain sufficient information to enable the program to ascertain whether another program has control over the key-lock or whether the program seeking to acquire control over the key-lock simply needs to update its key and try again.").

Although Escola does not explicitly say that said failure may be if T is not equal to Ti, having a current time unequal to a timestamp is well known in the art. An example of this is shown by "timeout", from MSCD, "An event that indicates that a predetermined

amount of time has elapsed without some other expected event taking place. The timeout event is used to interrupt the process that had been waiting for the other expected event." A person of ordinary skill in the art at the time of the invention would have been motivated to use a timeout because, as shown above, Escola has provided a detailed system of timestamps and current time, even though no explicit comparison of values is disclosed, and Escola further discloses, as shown above, that a need for conflict resolution in the case where a program acquires the key-lock but fails to release it. Further, MSCD has explicitly disclosed that a timeout may be used for just such a situation.

Allowable Subject Matter

22. Claims 18, 19 objected to as being dependent upon an art rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, further dependent on a 112 rejected claim, further subject of a double patenting rejection. Referring to claim 18, 19, the prior art does not teach or fairly suggest in light of the parent claims, $B=P+T*N$, where P is a number less than N.

23. Claims 20 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, further subject of a double patenting rejection. Referring to claim 20, the prior art does not teach or fairly suggest in light of the parent claims, $B=P+T*N$, where P is a number less than N.

Conclusion

24. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See notice of references cited.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gabriel L. Chu whose telephone number is (571) 272-3656. The examiner can normally be reached on weekdays between 8:30 AM and 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Scott Baderman can be reached on (571) 272-3644. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Gabriel L. Chu
Examiner
Art Unit 2114